

INCH-POUND

MIL-DTL-83503/20D

21 July 2004

SUPERSEDING

MIL-DTL-83503/20C

17 June 1998

DETAIL SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, FLAT CABLE, NONENVIRONMENTAL HEADER, RIGHT ANGLE (.100 SPACING) WITH POLARIZING FEATURE SOLDERLESS WRAPPOST OR PWB TERMINATION

This specification is approved for use by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-83503.

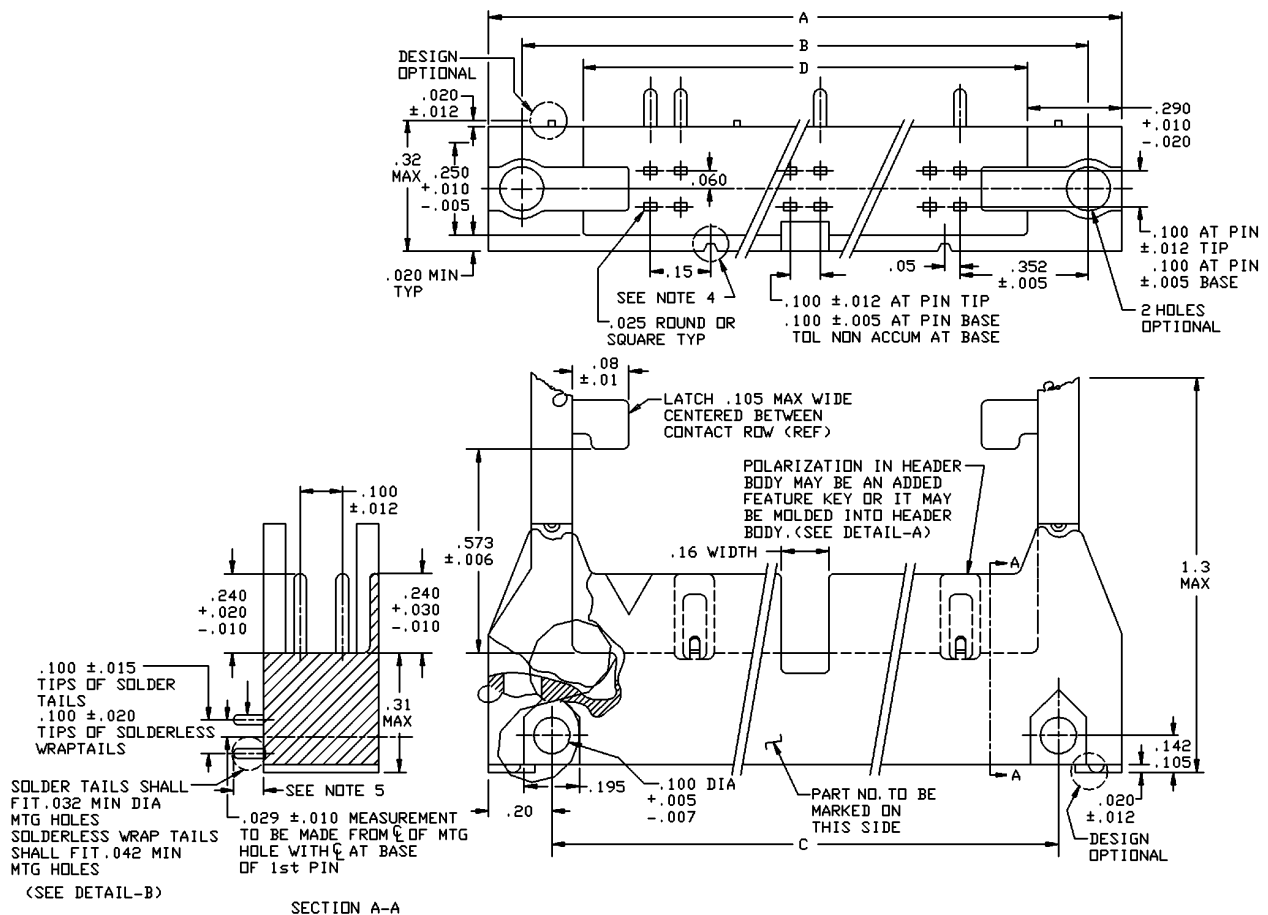


FIGURE 1. Dimensions and configuration.

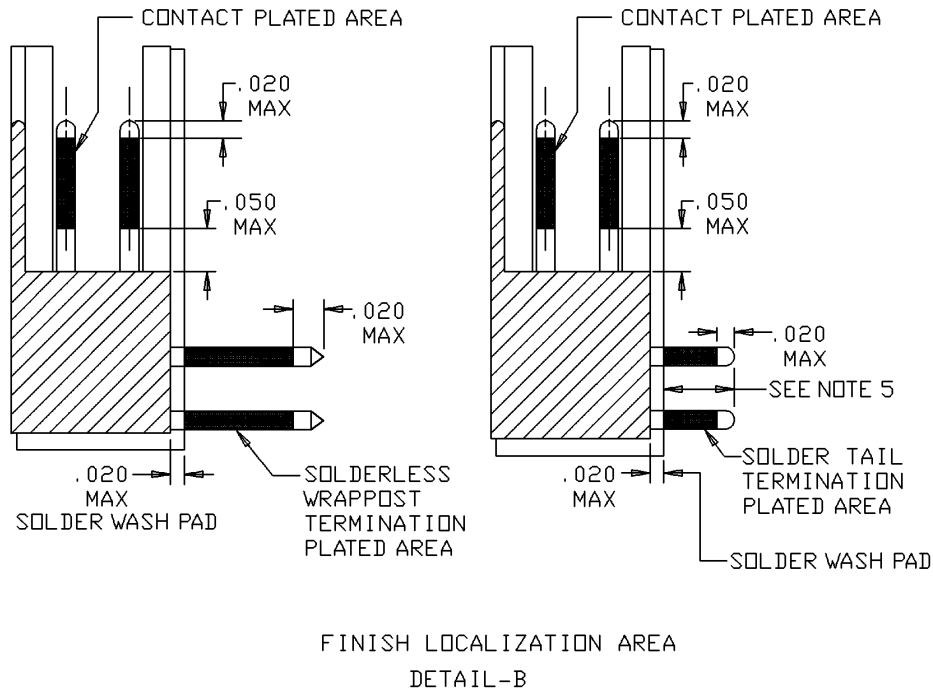
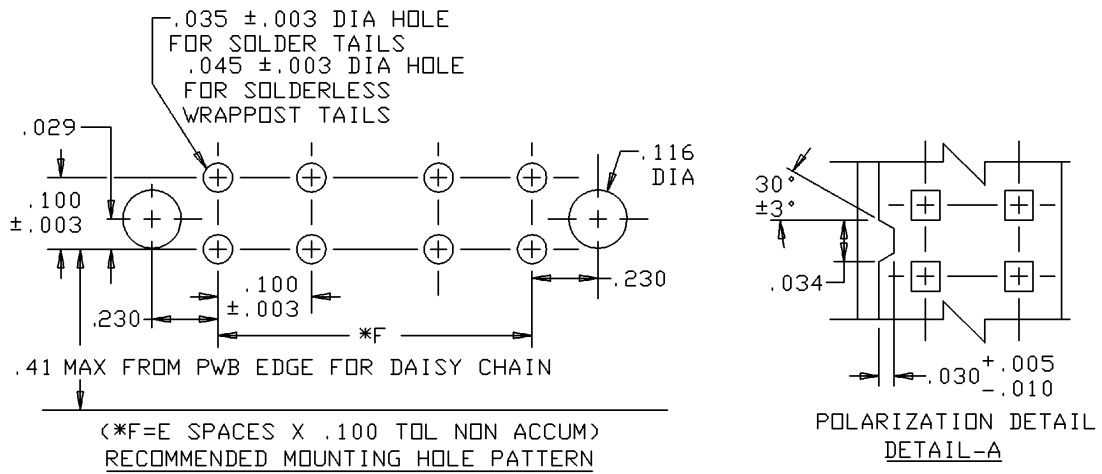


FIGURE 1. Dimensions and configuration - Continued.

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.003	0.08	.030	0.76	.10	2.5	.230	5.84
.005	0.13	.032	0.81	.100	2.54	.240	6.10
.006	0.15	.034	0.86	.105	2.67	.250	6.35
.007	0.18	.035	0.89	.116	2.95	.290	7.37
.010	0.25	.042	1.07	.125	3.18	.31	7.9
.01	0.3	.045	1.14	.142	3.61	.32	8.1
.012	0.30	.050	1.27	.15	3.8	.352	8.94
.015	0.38	.05	1.3	.152	3.86	.41	10.41
.020	0.51	.060	1.52	.16	4.1	.500	12.70
.025	0.64	.062	1.57	.178	4.52	.573	14.55
.029	0.74	.08	2.0	.195	4.95	.610	15.49
		.089	2.26	.20	5.1	1.3	33.0

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances are $\pm .005$ inch (0.13 mm) for three place decimals and $\pm .01$ inch (0.3 mm) for two place decimals.
4. For 10 and 14 position connectors the polarizing feature on this end is non-existent.
5. Pin length for printed wiring board (PWB) is as follows:

PWB thickness inch (mm)	Pin length min inch (mm)	Pin length max inch (mm)
.062 (1.57)	.089 (2.26)	.116 (2.95)
.125 (3.18)	.152 (3.86)	.178 (4.52)

FIGURE 1. Dimensions and configuration - Continued.

MIL-DTL-83503/20D

TABLE I. Dash numbers and characteristics.

Dash number	Number of pins	Dimensions						Termination, right angle contact type
		A inch (mm)	B inch (mm)	C inch (mm)	D ^{1/} inch (mm)	E spaces	F inch (mm)	
-01	10	1.26	1.10	.86	.690	4	.400	.062 PWB
-02	10	(32.0)	(27.9)	(21.84)	(17.53)		(10.16)	.125 PWB
-03	10							Wrappost
-04	14	1.46	1.30	1.06	.890	6	.600	.062 PWB
-05	14	(37.1)	(33.0)	(26.92)	(21.34)		(15.24)	.125 PWB
-06	14							Wrappost
-07	16	1.56	1.40	1.16	.990	7	.700	.062 PWB
-08	16	(39.6)	(35.6)	(29.46)	(25.15)		(17.78)	.125 PWB
-09	16							Wrappost
-10	20	1.76	1.60	1.36	1.190	9	.900	.062 PWB
-11	20	(44.7)	(40.6)	(34.54)	(30.23)		(22.86)	.125 PWB
-12	20							Wrappost
-13	26	2.06	1.90	1.66	1.490	12	1.200	.062 PWB
-14	26	(52.3)	(48.3)	(42.16)	(37.85)		(30.48)	.125 PWB
-15	26							Wrappost
-16	34	2.46	2.30	2.06	1.890	16	1.600	.062 PWB
-17	34	(62.5)	(58.4)	(52.32)	(48.01)		(40.64)	.125 PWB
-18	34							Wrappost
-19	40	2.76	2.60	2.36	2.190	19	1.900	.062 PWB
-20	40	(70.1)	(66.0)	(59.94)	(55.63)		(48.26)	.125 PWB
-21	40							Wrappost
-22	50	3.26	3.10	2.86	2.690	24	2.400	.062 PWB
-23	50	(82.8)	(78.7)	(72.64)	(68.33)		(60.96)	.125 PWB
-24	50							Wrappost
-25	60	3.76	3.60	3.36	3.190	29	2.900	.062 PWB
-26	60	(95.5)	(91.4)	(85.34)	(81.03)		(73.66)	.125 PWB
-27	60							Wrappost
-28	64	3.96	3.80	3.56	3.390	31	3.100	.062 PWB
-29	64	(100.6)	(96.5)	(90.42)	(86.11)		(78.74)	.125 PWB
-30	64							Wrappost

^{1/} Tolerance for "D" dimension is +.030 -.000 inch (+0.76 -0.00 mm).

MIL-DTL-83503/20D

REQUIREMENTS:

Design and construction:

Dimensions and configurations: See figure 1 and table I.

Mating connector: See MIL-DTL-83503/7.

Temperature range: -55°C to +120°C.

Voltage rating: 300 V rms.

Current rating: 1 ampere.

Materials:

Housing: The housing shall be glass filled polyester in accordance with MIL-M-24519, type GPT-15F, GPT-20F, or GPT-30F.

Accessories: Parts may be constructed of polyester in accordance with MIL-M-24519, or other materials specified in MIL-DTL-83503.

Polarization key: Shall be permanently attached to header (added feature key shall be bonded to header).

Contacts: The contacts shall be phosphor bronze or brass. Phosphor bronze shall be in accordance with ASTM-B139. Brass shall be in accordance with copper alloy CDA 260, spring temper; or copper alloy UNS No. C72500 spring temper, in accordance with ASTM-B122.

Contact plating:

Contact area: Gold in accordance with MIL-DTL-83503.

Solder tail termination area: Gold, or tin-lead in accordance with MIL-DTL-83503.

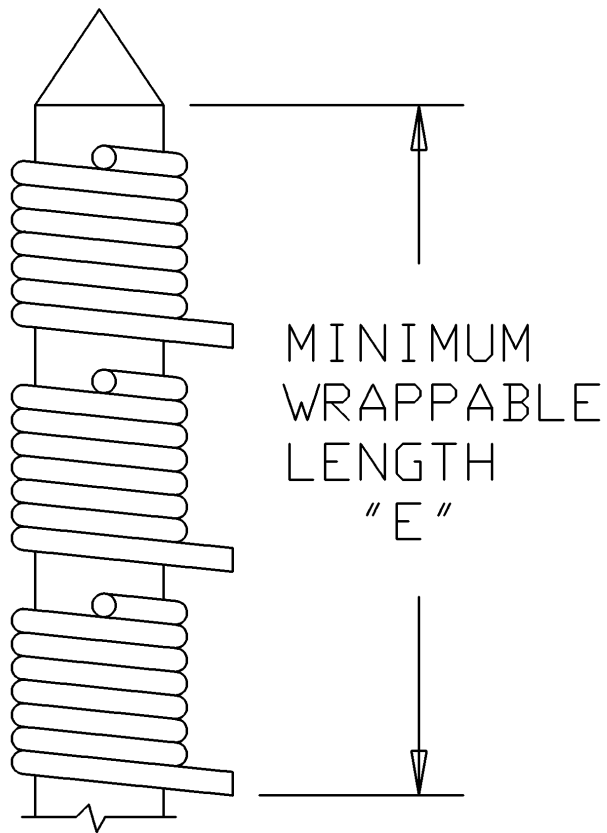
Solderless wrappost contacts:

Wrappost geometry: .025 inch (0.64 mm) square wrappost in accordance with figures 2 and 3.

Parallelism: See figure 3 and table.

Tip configuration: The tip configuration of the wrappost shall terminate in a radius or bevel to facilitate insertion of the wrapping tool. See figure 3.

Solderless wrappost contact wire accommodation: 28 or 26 AWG solid.

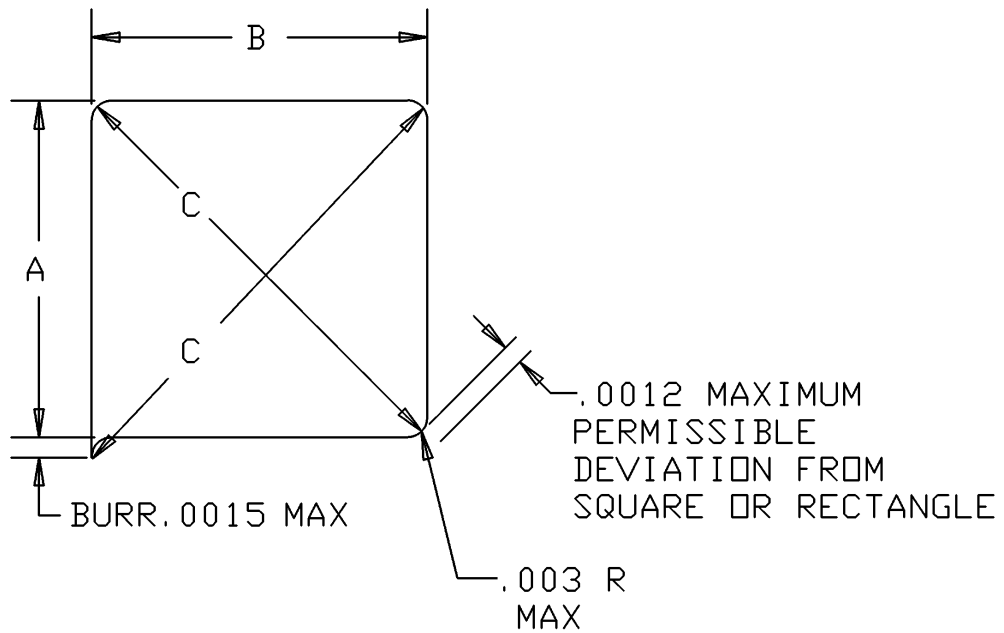


Number of wrapped corrections	"E" Length	
	Wire gage 28 inch (mm)	Wire gage 26 inch (mm)
1	.219 (5.56)	.226 (5.74)
2	.388 (9.85)	.402 (10.21)
3	.557 (14.15)	.578 (14.68)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.

FIGURE 2. Wrappable length (typical connection).



Inches	mm
.0012	0.030
.0015	0.038
.003	0.076

A inch (mm)	B inch (mm)	C inch (mm)	Parallelism inch (mm)	Straightness Inch/inch
.025 (0.64) nominal .022 (0.56) min	.025 (0.64) nominal .022 (0.56) min	.0355 (0.902) max .0325 (0.823) min	.002 (0.05)	.005

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. If the tip of the wrappost terminates in a bevel, the apex of the bevel shall be flat, with no side of the flat exceeding .015 inch (0.38 mm).

FIGURE 3. Wrappost geometry.

MIL-DTL-83503/20D

Withstanding voltage:

Sea level: 500 V rms, minimum.

Altitude: 200 V rms, minimum.

Contact resistance: 50 milliohms maximum.

Cable retention: Not applicable.

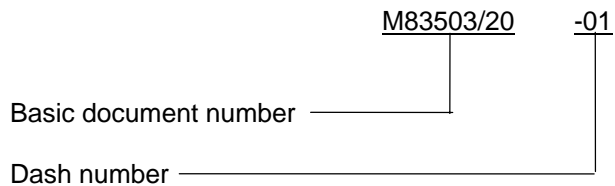
Connector-cable flexing: Not applicable.

Latch retention: The latch shall retain the mating connector when the cable retention force is applied to the mating connector cable. The latch shall also function as an ejector to eject mating connector.

Marking:

Part or Identifying Number (PIN): The PIN shall consist of the letter "M", followed by the basic specification number, "/", the specification sheet number, "-" and the dash number from table I.

Example:



Contact identification: Molded triangle "Δ" or notch to show number 1 contact, or raised numbers to show position number "1".

MIL-DTL-83503/20D

Referenced documents: In addition to MIL-DTL-83503, this document references the following:

MIL-M-24519
MIL-DTL-83503/7
ASTM B122
ASTM B139
CDA 260

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

CONCLUDING MATERIAL

Custodians:
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5935-4601-001)

Review Activities:
Air Force - 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://www.dodssp.daps.mil>.